THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by William Hunting, F.R.C.V.S.

No. 792 SEPTEMBER 12, 1903. Vol. XVI

The National Veterinary Association.

The annual general meeting took place at Windermere on the 9th and 10th inst. On the first day two papers were discussed, "State and Municipal Veterinary Affairs" and "Anthrax." On both subjects a well sustained discussion took place. During the whole meeting the rain poured incessantly, so that outdoor enjoyment was modified to a quiet philosophical tone not unadapted to the scientific mind. On Wednesday night the annual banquet was held with the President, Mr. F. Garnett, in the chair. Ladies were well represented, and no more successful function has been experienced by the members of the N.V.A. The dinner surpassed many that the metropolis has provided under similar circumstances, and the toasts and music reached a high standard. A gentleman from the Emerald Isle replied for "The Ladies," and his little gem of post-prandial oratory will be long remembered by those who were fortunate enough to hear it.

On the second day two more papers were disposed of after a good discussion—one on "The Septicæmia of Young Animals," the other on "The Duties and Legal Responsibilities of the Veterinary Practitioner."

The afternoon was devoted to a garden party given by Mr. and Mrs. Garnett at Storrs. The rain spoiled the delights of the beautiful grounds, but the time passed rapidly in the æsthetically furnished rooms and in the company of the ladies who graced the party.

Certainly most folk would prefer Windermere when the sun was shining on the water, but the spirit of Mark Tapley had a firm hold on everyone, and no discordant voice was heard, whilst some of the best optimists declared that the Lake District possessed a special charm all its own when the clouds hung over the hills and the rain fell in gentle showers. Perhaps this was the suggestion of a man with more of the artist and the poet in his nature than the majority, but it is true that no ardour seemed damped, and no one was heard to declare that the meeting had been anything but a great success.

Not a visitor to the meeting but confessed that if they knew next year would be as wet as this they would willingly attend if the same material comforts, the same scientific provision, and the same social pleasures could be ensured.

The President and his wife have made fast friends and grateful admirers of all the members and all the ladies who visited Windermere.

FRACTURE OF THE PELVIS.

Subject.—A five-year-old artillery remount in training for draught work at an out station. On June 26th, 1902, whilst being hooked in, reared and fell backwards. The next day he was sent into hospital and placed in slings; he walked to the hospital with difficulty and inclined to one side when moving.

Symptoms.—Right hip much swollen, very hot and painful on pressure. Fracture detected on rectal examination.

Course, etc.—The local swelling was treated by fomentations, after some time a blister was applied. The case was in slings for three months, on removal he walked fairly well, but moved inclining to one side. Walking exercise was given and continued till Nov. 6th, 1902, when the case was discharged "to light duty" after 132 days treatment. There was slight lameness, not more than one would expect as the result of shortening and general deformity which was present; he did light duty satisfactorily, carrying a man on the march about 300 miles; on one or two occasions after a hard day there was lameness rendering rest necessary, but after a few days rest he went on alright.

I saw the case for the first time in February, 1903, he was then carrying a native orderly about 8 miles daily, the only lameness was of the slight dropping nature usually seen after pelvic fracture resulting in shortening of the limb. There was marked deformity of the quarter, the outer iliac angle seemed wanting and the muscles of the quarter were atrophied.

On March 1st, whilst on the return march from camp the case was reported very lame. I examined it, found lameness marked, and put the case on the sick list. I made a careful rectal examination and found there was a fracture of the shaft of the right ilium immediately anterior to the acetabulum, I could feel an enormous callus and a large spicule projecting into the pelvic cavity. I was of the opinion that there was also a fracture of the flat portion of the ilium because the deformity of the quarter was so pronounced; the examination also gave me the impression that there was a transverse fracture of the pubis. I admitted the case into hospital on arrival here on March 5th. There was an improvement with rest, but any fast work caused marked lameness, and the case being incurably lame and unfit for further service destruction was carried out on May 21st.

Post-mortem examination.—Fracture of the shaft of the right ilium immediately anterior to the acetabulum, a fracture through the wing of the

right ilium midway between the external and internal angles, and separation of the pubic symphysis. The fracture of the iliac shaft shows an extensive ensheathing callus covered with long spicules, and a large spicule projecting into the pelvic cavity.

Fig. 1.—This antero-inferior view shows depression of the right side of the pelvis, the difference being well seen on comparing the internal iliac angles. Midway between the external and internal iliac angles ossific deposit is present and the general surface contour is concave instead of being convex. This lesion looks as if there had been an incomplete fracture produced by the two angles being forced together in a downward direction.

Fig. 2.—Supero-posterior view shows depression of the affected side, the surface contour between the external and internal iliac angles convex instead of being concave and a well marked ridge, with bony deposit.

Remarks.—The symphysis pubis appears to have been forced apart, then united by a fibrous callus, which came away in boiling leaving it in the condition now seen. The size of the callus and the presence of numerous spicules suggests a lot of movement during the process of healing, and I thought the case worth recording if only to illustrate what Nature can do in the way of repair, even though she only gets "half a chance" as in cases of this kind in our patients.

A. J. Williams, Vet.-Lieut. A.V.D.
Neemuch, Central India.

WHAT IS IT?

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Upon examination, I found a swelling about a foot in diameter and five inches thick in the region of the flank, it then extends on to the stifle and the under surface of the abdomen, involving one side of the sheath only. It has always appeared to be of an œdematous nature, pitting on pressure, and has never varied much in size since first I saw it With exercise the swelling diminishes slightly, only to regain its original size within a few minutes if the animal is rested. I enclose two photographs, one showing the whole of the horse and the other only part. You will notice three lines on the swelling, these are simply fissures as though the skin had been strained and become wrinkled.

I diagnosed the case as one of hernia of the abdominal wall and treated it accordingly for a month or so, with no result. I shall be glad if any brother practitioner can throw any light on the subject. I have already shown the animal to a number of veterinary surgeons, all of whom are equally as puzzled as myself.

J. Charles Coleman, M.R.C.V.S.
V. W. H. Veterinary Infirmary,
Swindon.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A quarterly meeting was held at the Grand Hotel, Birmingham, on Tuesday afternoon, August 19th. The President (Mr. F. H. Gibbings, of Nottingham) occupied the chair, and there were also present Prof. Axe, London; Messrs. L. C. Tipper, Birmingham; T. Huband, and T. J. Brain, Cheltenham; W. H. Brooke, Handsworth; T. Slipper, Tamworth; T. Chambers, Dudley; A. B. Forsyth, Cannock; W. T. Boyd, Ledbury; H. Thackeray, Eccleshall; W. S. Carless, Worcester; W. Carless, Stafford; J. W. Coe, Stoke-on-Trent; W. Tart, Longton; J. Young, King's Heath; J. Whyte, Tenbury; F. W. Barling, Ross; J. Thomson, Coventry; T. J. Merrick, Northampton, treasurer; and H. J. Dawes, West Bromwich, hon. sec.

Apologies for non-attendance were received from Profs. Pritchard, Dewar, Dr. Manley (West Bromwich), Messrs. R. C. Trigger, A. W. Mason, J. Malcolm, J. Blakeway, J. J. Burchnall, J. L. Barling, G. Wartnaby, A. Hodgkins, T. Spencer, P. Woolston, A. Over, J. Martin, H. E. Powell, J. R. Green, J. A. Connell, L. W. Heelis, G. Prickett and others.

The Late Mr. H. Olver.

The Hon. Sec. said that before commencing the proceedings of the afternoon there was a matter to which he should like to refer which had happened since the last meeting, and that was the sad loss they had sustained by the death of their old and respected member, Mr. Harry Olver, of Tamworth. Very few who were present at the last quarterly gathering of the Association on May 5th and heard him take part in the discussion, apparently in the best of health, could have thought that he would be laid aside by death a fortnight later. He did not know any member who had done more in his time for the Association than Mr. Olver, nor did he think there was any member who had greater respect shown to him. He was a very dear friend to all of them, and it was a great pleasure to know him. He was elected a member of the Association as long ago as 1874—about thirty years since. In 1875 he was made a vice-president, and in 1876, when the Association was nearly broken up, he took over the duties of hon. sec. in place of a paid official. The flourishing condition of the Association to-day was no doubt due in a large measure to the energetic work and the valuable time which he devoted to it. In April, 1881, he was elected president, and again in February, 1894. They would many of them remember the very powerful presidential address he delivered on the last occasion, when he had not a note to help him. He (the speaker) was away from home when he heard of Mr. Olver's death, but he sent a wreath in the name of the Association, and the funeral was attended by several members. In acknowledgment he received a letter from Mrs. Olver, who said that she and the family found it a great comfort in their heavy bereavement to know the kind regard felt for the late Mr. Olver by his friends and associates. During the 30 years that Mr. Olver had been a member of the Association he had been most regular in his attendance, and he very rarely missed a meeting. That was an example which others would do well to follow, in which case there would be less to complain of in that direction than at present. He begged to move that a letter of condolence be forwarded to the widow and family, and also that a record of the valuable services he has rendered to this Association be entered upon the minutes.

Prof. Axe briefly seconded the motion.

Mr. Brooke, in supporting, said Mr. Olver was one of his examiners, and he should always cherish the kindliest thoughts concerning him.

The President added that he had known Mr. Olver

for many years and considered him not only an ornament to the profession but also to the town in which he lived, and where he had done much useful work.

The resolution was carried *sub silentio.*

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Mr. Robert Cockburn, of Eastwood, Notts., was nominated by the President for membership of the Association. His name will, according to rule, be brought forward at the next meeting.

The following gentlemen, duly nominated at the previous meeting, were unanimously elected members:

Mr. Richard Hughes, of Oswestry, proposed by the Hon. Sec. (on behalf of Mr. G. Wartnaby) and seconded by Mr. W. S. Carless, and

Mr. P. B. Boyle, of Belper, proposed by the Hon. Sec. (on behalf of Mr. J. R. Green), and seconded by Mr. Tipper.

The Sanitary Institute Delegates' Report.

At the last meeting of this Association those present were good enough to depute the President and the Hon. Sec. to represent them at the 21st Congress of the Sanitary Institute which was held at Bradford the second week in July. Your delegates having to the best of their ability discharged that obligation, have now the pleasure of submitting to you a brief account of their stewardship.

The questions that formed the subject of discussion in the various sections were far too numerous to be dealt with here in anything like detail, many of them in fact bearing so remotely on matters affecting the welfare of our own profession as to be outside the scope of our enquiry.

There was, however, a section devoted to the study of veterinary science in which there transpired much that was interesting as well as profitable. It is to this particular portion of the Congress's deliberations that we propose to refer. The section was presided over by Mr. Charles Drabble, of Bradford, who delivered a very sound and practical address on "The Relations of Veterinary Matters to Public Hygiene." He enlarged upon the importance of public authorities paying proper attention to veterinary practice, especially so far as it concerns the health of the community in the treatment of tuberculosis in cattle and its transmissibility to the human subject in meat or milk. Then followed papers on "The Slaughtering of Animals for Human Food," by Mr. A. Holburn, Chief Veterinary Inspector at Manchester. "The Collection, Distribution, and Contamination of Milk," by Mr. J. W. Brittlebank, also of Manchester; and "The Disposal of Dead Animals," by Mr. W. Shaw.

Mr. Holburn's chief points were humanity, hygiene, and economy. From the point of view of hygiene he held that the Jewish method of slaughtering was better than the christian.

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As will be imagined there was much food for reflection, but your delegates regret that there was not a larger number of veterinary surgeons present to take part in the debates, the attendance being very poor indeed, and it must have been very disheartening to those gentlemen who had gone to the trouble and labour of preparing papers for the veterinary section of the Congress.

The President of the Congress this year was the Earl of Stamford, whose inaugural address dealt in an interesting manner, amongst other things, with consumption and sewage disposal. With regard to consumption he pointed out that whilst an absolute specific had yet to be found, the more gradual growth of modern sanitation had brought with it a steady decrease in the mortality from consumption which to-day was 50 per cent. lower than it was 40 years ago. To that happy result the veterinary surgeon may fairly claim to have contributed in a greater or less degree and have thus fairly established their title to representation at the deliberations of the Sanitary Institute.

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Public Health Congress.—Delegates' Report.

Gentlemen,—As most of you are aware, at our last meeting Prof. Axe and myself were appointed delegates to the Public Health Congress at Liverpool, unfortunately Prof. Axe could not attend, otherwise no doubt you would have had a much more exhaustive and elaborate report. There was no separate veterinary section as at Bradford, and this at first sight may seem a disadvantage, but it really was not so, for being included in the Bacteriology and Comparative Pathology sections members had the opportunity of laying their views before a much more varied and extensive audience. Prof. Boyce gave a most pleasing address in opening this section, dwelling on the importance of bacteriology in connection with the public health of this country and indicating that the diseases of animals was much more important than they generally thought, and that there was no field of research which would repay the student, the farmer, and the cattle importer so much as the investigation of animal diseases. A paper was given by Mr. Lloyd, of Sheffield, on "The Milk Supply of Large Towns," and the discussion followed much on the same lines as that at Bradford. A very able paper was given by Professor Young, of the Aberdeen University, on "Bovine Tuberculosis and Public Health," who said that it had been proved that human tubercle was transmissible to cattle, and he was of opinion the converse was true that bovine tuberculosis was transmissible to man. On the following day an interesting paper was given by Mr. Stafford Jackson on "Some of the Diseases Communicable from Animals to Mankind," and dwelt on the importance of veterinary inspection of all animals that were likely to interfere with the public health. A spirited discussion followed in which I was pleased to observe that the medical profession gave credit to the veterinary profession for the good they had done, and were awakening to the fact that the services of veterinary surgeons were imperative in the municipal offices of the cities in this country. As a result of these papers and discussions the following important resolutions were passed:

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The proceedings of the section closed with a vote of thanks to the president (Prof. Boyce) and secretaries (Professor Hewlett, Dr. Annett, and Mr. T. Eaton Jones).

On the motion of Mr. Huband, seconded by Mr. Tipper, a vote of thanks was accorded the President and Secretary for their services as delegates, and for the interesting reports they had presented.

Local Veterinary Inspectors.

The Hon. Sec. announced the receipt of a letter from the Lincolnshire Veterinary Medical Association enclosing a copy of a resolution passed by them in which they suggested to the Board of Agriculture "that the employment of Local Veterinary Inspectors to determine the existence of swine fever or other scheduled diseases in a neighbouring inspector's district, is likely to decrease the local practitioner's prestige in his own district and is calculated also to do him harm."

Prof. Axe said he was almost responsible for what had been done. Five or six years ago he made a suggestion at the Farmer's Club in London that the Board of Agriculture should appoint men in different parts of the country to supervise the work of the local inspectors, and what was called the local inspector was probably one of the Board's inspector's for the district. The objection of the Lincolnshire Society seemed to be that those Board inspectors came into their district, but he (Prof. Axe) did not see how they could get over it. It seemed to him to be a rational mode of procedure.

Mr. Chambers thought it was ridiculous that a case of swine fever occurring within a few yards of his own door should have to be certified to by a gentleman from Birmingham. That was the way the Board of Agriculture had done their work all along. He was sorry Prof. Axe had suggested it.

Prof. Axe: No, I did not. I suggested that officers of the Board should be appointed.

The President: The sore point is that a neighbouring veterinary surgeon is appointed a district inspector. It would be better perhaps if the Board appointed London men instead of local competitors.

Mr. Young instanced an experience of his own in which the action of the Board of Agriculture seemed very anomalous.

Mr. W. Carless (Stafford) said he was a local inspector and he had never known the appointment cause local friction. The fee allowed was certainly not excessive, and the most he got out of it was the honour of the thing.

The Hon. Sec. said that in Birmingham the Board of Agriculture appointed a man to work solely for them, and when he was too busy they sent a deputy.

It was proposed by the President that the communication from the Lincolnshire Society lay on the table.

This was seconded by Mr. Huband and agreed to.

The War Office and the A.V.D.

The Hon. Sec. read a circular letter from the Central Veterinary Medical Society enclosing a copy of a resolution passed by them regarding the conditions of service in the Army of members of the veterinary profession, and inviting this Association to follow their example.

Mr. Chambers thought that circular ought to lay on the table as well. The Earl of Hardwicke, the Chairman of the committee appointed to consider the grievances of the Army Veterinary Department, was among those present at the dinner to Prof. Williams, and he made a speech highly favourable to the profession. The report of the committee was not yet out, and therefore it would be better not to do anything in the matter.

Mr. Tipper seconded the proposal that the circular lay on the table, and this was carried.

"STERILITY."

By Prof. J. Wortley Axe.

Prof. Axe said that in view of the present aspect and the future prospect of the motor car industry, it seemed almost questionable whether they need trouble themselves much as to their horse population. It was perfectly clear from recent events that their place, in a very large measure, was being taken by that useful but to them not very welcome force electricity. Notwithstanding the considerable displacement of the horse as a means of locomotion, which had already occurred, there was a bright side to the question. At present our home produce failed to supply the existing demand In the event of this displacement of horse power going on, as it no doubt would do, they had to remember that they were importing large numbers of horses every year over and above those which were bred in this country. There could be no doubt that before England suffered as a horse-breeding nation the importation of horses from abroad would be largely diminished. The effect of the new means of locomotion would not therefore immediately fall upon them, because the importation of horses would in the future have to be done at a diminishing profit, and when that reached a certain unremunerative margin importation would cease. Our home supply would then continue to meet immediate demands. How far further expansion of the electro-motor industry may in the future affect the breeding of horses in this country it was impossible to foretell.

It was a well-known fact that 40 per cent. of our brood mares failed to breed, but it was not to be supposed that because they did not breed they were sterile. There were various causes which interfered with conception, and also with the period of incubation, and it was of that more especially that he proposed to treat.

Sterility in the female would seem to depend upon one of several causes. Either the ovaries are incapable of forming ova or the ova when formed are defective and incapable of fertilisation. The ovaries, on the other hand, may be functionally perfect, but owing to some obstructive condition of the fallopian tubes or oviducts they fail to reach the uterus. Again, a perfectly healthy ovum may be impregnated and safely conveyed to the womb, but unless that organ is in a normal condition it may die, conception would not then take place and the mare would as a consequence fail to breed.

The writer has known several instances where the entire structure of the egg-forming glands has been destroyed by the growth and expansion within them of cysts or bladder-like formation; and other cases where the glands have been rendered functionally useless by the development within them and round them of malignant tumours. The fallopian tubes may be rendered impervious either by pressure from without or thickening of the membrane lining them, or by morbid growths within them or upon them. Mares which have passed through a period of difficult foaling not unfrequently become sterile owing to the fallopian tubes becoming blocked by inflammatory products, or so far thickened as to obliterate the passage and prevent the ovum reaching the uterus.

However perfect the ovaries or oviducts may be, impregnation cannot take place unless the semen of the male gains access to the uterus, for which purpose it is necessary that the entrance thereto should be open to receive it. Obstruction at this point is not unfrequently the cause of sterility in mares, either as the result of a twist of the neck of the uterus, or a thickening of its walls, or disease of the mucous membrane, any one of which may obstruct the passage and prevent the entrance of the sperm element into the womb.

From these considerations it will be seen that the possibility of restoring fruitfulness in the sterile mare will depend upon the nature of the causes to which it is due. Of these some are amenable to treatment, but others are altogether incapable of being removed. While it would be impossible to restore the function of an ovary or egg gland whose structure had been broken up and absorbed by the growth of cysts or some other formation within it, it might not be difficult to remove or

FRACTURE
OF THE
PELVIS.

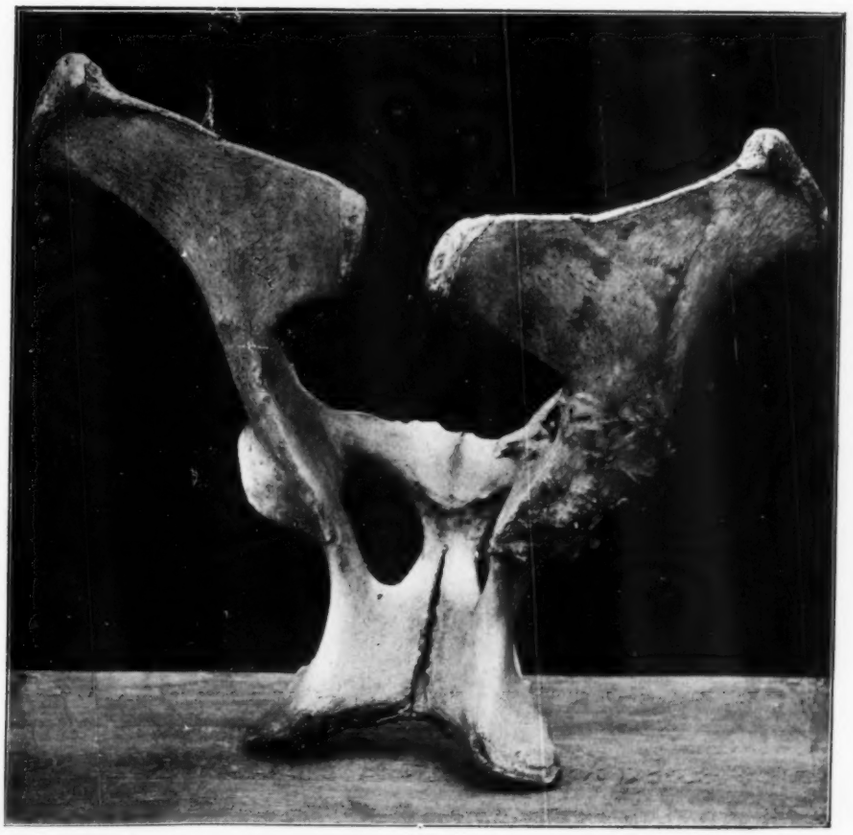

FIG. 1.—Antero-inferior.

FIG. 2.—Supero-posterior.

To illustrate Lt. A. Williams' case, p. 150.

To illustrate Mr. Coleman's case, p. 150.

overcome an obstruction in the neck or mouth of the uterus, or in some cases to restore its lining membrane to a normal condition.

In order that an impregnated ovum may proceed to develope into a fœtus the womb with which it must establish a connection will require to be in a healthy condition. Many mares fail to breed not from any structural defect of the reproductive organs, but from a functional derangement of the mucous membrane of the uterus or vagina whose vitiated secretion imperils if it does not immediately destroy the life of the spermatozoa, or should impregnation take place the fertilised ovum sooner or later succumbs to its unhealthy environment. Many of those cases where mares return to the horse and receive service again and again without proving fruitful do so because of some catarrhal or other abnormal state of the uterus unfitting it to nurture the impregnated germ.

Although little can be done to rectify those graver structural defects of the ovaries and the uterus which add to the prevalence of sterility, much may be done to prevent that greater waste resulting from obstructive conditions affecting the mouth and neck of the womb which prevent the semen from entering it.

It has repeatedly been affirmed and implied that in the act of coition the spermatic fluid of the horse is deposited in the vagina of the mare, and that the spermatozoa subsequently enter the uterus by virtue of their own powers of movement, or are sucked into the latter organ during its relaxation when copulation is completed. While allowing the operation of both these forces in the act of insemination it is impossible to disregard the mutual adaptation of the male and female organs to the purpose of conveying the semen directly into the mouth of the womb. The projection of the urethral canal beyond the glans-penis in a state of erection would seem to indicate that this arrangement was designed to ensure the delivery of the male element into the mouth of the uterus. That this should take place is not absolutely necessary to fertilisation. It has been proved by experiment that the injection of semen into the vagina alone may be sufficient to induce pregnancy. Because this is so it has been argued that the spermatic fluid in the act of copulation in the horse is not discharged into the uterus. It seems to the writer that such a conclusion is not warranted by the facts. That the introduction of semen into the vagina is followed by pregnancy does not exclude the possibility of its being deposited directly into the mouth of the womb during the act of coition, but would rather appear to afford a supplementary provision for impregnation in the event of this not being effected. Whether insemination is brought about by one method or the other, or both, a clear entrance to the uterus is an indispensable condition to impregnation by natural means.

Artificial Insemination.

As obstructions of one kind or another are frequently encountered here it has been found necessary to resort to artificial methods of insemination in those cases where the hindrance can be overcome and a passage forced into the uterine cavity.

For many years it has been the practice with some stud managers to pass the fingers into the uterus of mares which failed to breed before putting them to the horses, the object being to open the passage for the entrance of the seminal fluid, and in many instances with the result that pregnancy has followed the service. In untutored hands this method of clearing the way has sometimes been followed by bad results, but when properly performed it is quite a harmless and simple operation.

One more safe and reliable, however, is to resort to artificial insemination. This is effected by means of an instrument (inseminator) designed to collect the semen of the male from the vagina of the female after service, and transfer it directly into the uterus. In recent years this practice has been largely adopted by breeders and with a considerable amount of success. A notable instance of its value was shown, at the dispersal sale of the stud of the late Duke of Westminster, when the yearling filly "Sandflake" the daughter of "Trenton" and "Tandiway" was sold by auction to Mr. Siever for 5500 guineas. This filly was the result of conception following upon artificial insemination.

In America the operation has been practised on a considerable scale for many years, and to a less extent in France, Germany, Russia, India, and other countries. More recently attention has been drawn to it in this country, and the results so far obtained are, to say the least, encouraging. Mares which have been to service again and again, year after year, without being impregnated by natural means have at once been rendered fruitful by artificial insemination. Thus valuable animals relegated to the drudgery of the farm as lost to the race have been restored to the stud and converted into a valuable asset. The advantages of this mode of propagation is not alone that it overcomes the impediment to insemination in the mare and renders her fruitful, but by reducing the work of the sire his strength and vigour are conserved and his services become more effectual. To old and valuable stallions artificial insemination may be made to reduce their work by one-half or even more, while at the same time it preserves their productiveness and prolongs their lives and usefulness at the stud. By the same means young fashionable stallions may be protected during the period of growth against venereal excess, which in so many instances is allowed to sap the constitution and weaken not only the individual but his offspring. The overstrain which the rush to fashionable horses inflicts upon them is responsible for much of the premature mortality and impotence from which many of them suffer, and to this is attached an immense annual loss to farmers and breeders.

Artificial insemination requires that the operator be provided with a suitable instrument to gather up and transfer the semen to the uterus of the mare, and that certain precautionary measures against failure be observed. In this latter connection it is necessary: (1) That the temperature of the syringe employed be raised to 100° F., which may be done by placing it in a pail of warm water. (2) It should be thoroughly clean. (3) The semen should be injected into the uterus of the mare so soon as it leaves the sire. Exposure to the air, to cold, or to strong sunlight weakens the vitality of the spermatozoa, and when unduly prolonged kills them and defeats the operation.

The mare to be inseminated must of course be "in use," and while in this condition is to be served by the horse in the usual way. The seminal fluid discharged during the service will be deposited on the floor of the vagina near to the mouth of the uterus. When the horse has left the mare the warm syringe is to be introduced into the passage and carried forward by the left hand to the part indicated, while indiarubber ball is being compressed by the right one. The point of the instrument is now directed into the seminal fluid, then the pressure is to be removed from the indiarubber ball, as a result of which the one streams into the other. The syringe having become charged, the nozzle is introduced into the uterus, the ball is squeezed and the operation is completed.

Where it is intended to inseminate a second or a third mare a fresh charge of semen should be obtained from the same service in the manner described, and the operation repeated.

A supply of seminal fluid may sometimes be caught in a cup directly from the male as he leaves the mare, or some of the service discharged by the mare may be secured in the same way.

Discussion.

Mr. W. Carless (Stafford) said he had nothing to detract from or add to such a lucid and straightforward paper. With regard to artificial insemina ion, he supplied himself one season with an instrument similar to that used by Prof. Axe. He tried it several times, but never considered that he gave it a fair trial, because the mares were supposed to be sterile. Some of them had been served with all the stallions in the neighbourhood for a year or two but met with no success. If the parts were in a perfectly natural state he could quite believe that artificial insemination was possible, but it had certainly not answered in his case.

Mr. Huband said he should like to thank Prof. Axe for his excellent paper, and to congratulate him upon his retention of the wonderful power of imparting knowledge, which was quite as impressive to-day as it was 25 years ago. He also wished to thank him for the refreshing reminder that the motor car was not entirely to supersede the use of the horse; his remarks on the subject were very much to the point. At present there was no difficulty in finding customers for really good horses; in fact really good animals of all classes were as scarce as ever they were. He was sorry to say he had had no experience of the inseminator, but after what Prof. Axe had said he should certainly get one and give it a trial. He was struck with some of the causes of sterility, and particularly that in which the mouth of the uterus was closed. He had many times found that condition existing, and he had satisfactorily and successfully done as was suggested in the paper.

Mr. Barling agreed that it was a most interesting subject, and especially to those concerned, as he was, in horse breeding. He had had some little experience of the inseminator, but it had not been so successful as he could have wished. He had operated on four mares last year and three the year before, and in no case had it been successful. He performed the operation himself as carefully as possible, had warm water in the bucket at a temperature of 102. He kept four stallions, and made it a rule that no maiden mare should be served until she had been examined. In his opinion the reason why so many mares failed to breed was because the semen could not enter the womb, the os became closed, and especially in a mare that had not had a foal for a year or two. Another reason was that he believed the condition of the womb was sometimes against conception—the presence of acid, for instance. In such cases he applied a two per cent. solution of bi-carbonate of soda, which would make the womb sufficiently alkaline—and of course the condition of the womb should be alkaline.

Prof. Axe suggested that the presence of acid could be found by testing.

Mr. Tipper asked if anyone had had experience of mares that would not conceive under ordinary conditions, but which when taken out of the cart while at work and put to the horse often conceived.

Mr. Coe said that the opening of the os was often followed by good results. One thing he had noticed in aged mares was a collection of thick mucus inside the os. With regard to the insemination, was it necessary to disinfect it?

Prof. Axe said the disinfecting of it was very essential. But the inseminator he had used was not an ideal one, it was really too long and too clumsy. He should like to see a smaller one which could be inserted with the hand.

Mr. Brain said he had been very interested in the paper. He should like to know which was the most common cause of barrenness. Mr. Barling seemed to think it was closed os. With regard to the supposed presence of acid, he was trying that solution on a herd of cows, but had not had time to prove whether it was successful or not. His own idea was that there was some fault in the lining membrane of the uterus.

Mr. W. S. Carless regretted that he had had little or no experience of the subject, although he had found the paper very interesting. He had found, if he had a mare that would not breed, that by sending her to meet the horse a mile or two and afterwards letting her walk back she would be more likely to get in foal than by taking the horse to her. He thought a horse living on the farm was not so successful.

Mr. Barling wondered whether the feeding of mares had anything to do with their barren condition.

Mr. Brain mentioned that cows bred on a sewage farm could not be got to stand to the bull. He took it to be connected in some way with the feeding. He thought that animals in a rough condition were better for breeding purposes than animals that were pampered up.

Prof. Axe said that if a horse were overfed without having sufficient work, or if it were underfed and had too much work, it would probably conduce to a condition of the system which would not be calculated to encourage a retention of the ovum, and therefore feeding might operate prejudicially against gestation. He knew of his own knowledge that if cows in calf were allowed to eat largely of decayed mangolds they would be liable to abort, and improper feeding prejudiced the life of the impregnated ovum, and with regard to sewage he knew as a matter of experience that it would produce abortion. He had been particularly interested in the remarks of Mr. Barling and Mr. Carless with regard to their experience of the inseminator. There were many excellent men, on whom they could rely, who spoke in the highest terms of artificial insemination, and he was rather surprised that neither Mr. Barling nor Mr. Carless had had any success with it. It might be that the mares in their cases were not suited to the purpose. Speaking of the effect of work on mares, a friend of his in one season foaled down 19 mares without a mishap, and it was his boast that they all continued to work within a week or ten days of the time of foaling. In conclusion he invited any practitioner who had used the inseminator to let him know the result. He was anxious to assimilate the experiences of practical men, and he thought they should be found in the veterinary profession.

The President proposed a vote of thanks to Professor Axe for his very able and interesting address. They were the more indebted to the Professor since he was invited almost at the last moment, but he very readily accepted, and the practical value of his remarks was too obvious to need emphasis. As a previous speaker had remarked, Professor Axe possessed all the gifts of oratory that many of them so well remembered over twenty years ago.

Mr. Tipper seconded the motion, which was heartily carried.

Professor Axe, in acknowledgement, said he was glad at any time to be of service to the Association.

On the motion of Mr. W. Carless, seconded by the Hon. Sec., it was resolved to hold the next quarterly meeting at Stafford.

Before separating, the members, as usual, had tea together.

H. J. Dawes, F.R.C.V.S., *Hon. Sec.*

Mr. Ben Hoadley, M.R.C.V.S., was appointed Veterinary Inspector to the Corporation of the County Borough of West Hartlepool at their meeting on Wednesday evening, 2nd inst., in the place of Mr. Alfred Peele, who had resigned that position owing to ill-health.

TUBERCULOSIS IN CHILDREN: ITS RELATION TO BOVINE TUBERCULOSIS.

(Continued from p. 144.)

Discussion.

W. Arbuthnot Lane, F.R.C.S.,
Surgeon, Guy's Hospital; President of the Section.

I should like to insist on the importance of recognising that either local injury or disease predisposes to infection. The glandular enlargement, so often seen in children, is much too readily assumed to be tuberculous. Many other causes give rise to it.

Douglas A. Reid, M.D., M.R.C.S.,
Medical Officer of Health, Tenby.

Until the meeting of the British Congress on Tuberculosis in 1901 it was an accepted creed that bovine and human tuberculosis were one and the same disease, and that it could be transmitted through meat and milk from cattle to the human subject.

Then came the bomb-shell of Professor Koch, exploded with great suddenness and with far-reaching effect throughout the civilized, and particularly the medical, world. The eminent Professor in starting a new creed used words that will be memorable throughout the ages. "I should estimate the extent of infection by the milk and flesh of tuberculous cattle and the butter made of their milk as hardly greater than that of hereditary transmission, and I therefore do not deem it advisable to take any measures against it." Inasmuch as the theory of hereditary transmission has now been practically abandoned this must be read to mean that bovine tuberculosis cannot be transmitted to man. Dr. Nathan Raw has advanced a third creed, which somewhat adds to our difficulties in coming to a conclusion in the matter. If there is a "variety of bovine tuberculosis that can be conveyed by milk from tuberculous cattle" then we are right, and the Government is right, and the National Association is right in warning the public to avoid tuberculous meat and milk, and Professor Koch is wrong in advising a contrary procedure.

But while experiments and investigations are going on, who can say positively where truth can be found? What has become of the French doctor who inoculated himself with bovine tubercle? It is not my intention to occupy your time with opinions of my own on this subject, but, by the courtesy of Dr. Crombie, I am enabled to contribute some facts and statistics connected with India that may be of value when we come to weigh the evidence for and against the different views that have been advanded. Dr. Crombie submitted a report to the Secretary of State for India on the Congress on Tuberculosis at Berlin in 1899, whieh was published in the report of the Sanitary Commissioner with the Government of India for that year. This publication is not easily available, and Dr. Crombie has very kindly obtained for me a copy of that part of his report bearing upon tuberculosis in India, It must be borne in mind that a large number of persons die in India without any medical attendance whatever, and therefore in some parts only of the country can statistics be obtained, and one part is in the North-West Provinces. Here during the year 1897 the cause of death was verified in 15,116 cases by means of the medical staff and a professional agency which voluntarily supplied the required information. Of these 15,116 deaths, 40 only were from tubercle of the lung—6 children and 34 over the age of 16 years. There were no deaths among children from tabes mesenterica or tuberculous meningitis. The 6 children who died were all under 18 months. The experience of all medical men in India is that, in contrast with that in Europe, diseases of the chest, and phthisis among them, take quite a subordinate place in the sickness and mortality of India, and that the tuberculous diseases of children are exceedingly rare among the civil population. Dr. Crombie further reports: "With regard to tuberculous diseases among children, all authorities are unanimous as to their rarity. Taking strumous enlargement of the cervical glands as the commonest and most obvious form of tuberculous infection in children, Chevers says that he never saw a case in a native of the plains of India." And other authorities confirm this. Tuberculous meningitis is, however, met with in India, but less frequently than in Europe. Tabes mesenterica is certainly very rare among the civil population. Chevers says that he never admitted a case to hospital. Morehead does not mention it as occurring in the large Byculla schools at Bombay, neither do Webb and Fayrer as regards the Calcutta shools, and the contemporary accounts of the health of the children (mostly Indo-Britons) at the Madras orphan asylums are silent with regard to it. It was at one time, however, apparently very prevalent among the children of European soldiers serving in India. From 1880 to 1883 inclusive there were 162 admissions and 86 deaths from tabes mesenterica among European children in India, while only 3 prisoners and 5 native soldiers were so affected. In 1896 there were no cases in the native army or gaols of India.

Tuberculous disease of the hip-joint is exceedingly rare. Dr. Crombie never saw a case, nor have any of the medical officers whom he has questioned. From the very interesting statistics in Dr. Crombie's report it is not clear that the great immunity of residents in India, both native and European, so conspicuous in childhood, is extended in an equal degree to adults, at least as regards the conditions under which our soldiers and prisoners live.

The causes of lesser prevalence of tuberculosis in India are given by Dr. Crombie as follows:

1. The comparative infrequency of bovine tuberculosis in India.

2. The native habit of boiling all milk before using it. No native of India knowingly drinks a drop of unboiled milk.

3. The exclusion of beef from the food of a large proportion of the native population. To the Hindu it is an abomination. Stall-fed beef is unknown in India, even in the large towns.

4. The flesh of the goat is almost exclusively used by Mohammedans, that of the sheep by Europeans. The goat is one of the animals most "refractory" to tuberculosis. Goat's milk is also much used by the natives.

5. The open-air occupation of the natives.

6. Abstinence from alcohol.

7. The native of India converts all his butter into "ghi" by a process of boiling and skimming, which must destroy any tubercle bacilli it may contain. The European in India eats raw butter.

8. Children in India have this additional advantage over European children (in India) that their mothers almost without exception suckle them until they are 2 or 3 years old.

9. The comparative infrequency of the diseases which seem most frequently to predispose to tuberculosis—namely, measles, scarlatina, and whooping-cough—which, when they do occur, are milder than in Europe (Ewart).

The inference to be drawn from the preceding facts is that where the flesh and milk of bovine animals is not much used by the people, and especially where cow's milk, except in a boiled state, is not used for the feeding of children, tuberculous diseases are extremely rare, and that this affords evidence against Professor Koch's contention.

On the other hand we have to face the statement, which I suppose we must accept as a fact, that a very large number of milch cows are tuberculous and that

the number so affeeted is increasing. As an increasing number of British mothers refuse to suckle their children we ought to find more tabes mesenterica and tuberculous peritonitis among the children. Dr. Raw says it is so, and this I was not certain about, having no reliable statistics to guide me.

In the town in which I live the milk supply comes from some twenty-five farms outside the borough boundaries, and therefore not under the ken of the medical officer of Health. There is no regular and systematic inspection of the cowsheds and dairies, nor of the cows that supply the milk. Probably many of the cows are tuberculous. One would, therefore, expect to find a considerable number of cases of tabes and tuberculous peritonitis amongst the children in the town. But the official records show that in thirty-one years only four deaths have been certified from tabes mesenterica and two from tuberculons peritonitis. During the same period eighteen deaths have occurred from tuberculous meningitis. It is possible that the pure sea air and the bright sunshine may have destroyed the bacillus and that some of the children are brought up on milk that has been boiled, though I am inclined to doubt if great care is taken in this respect. I know also that among the poorer classes (where one generally finds tabes) the mothers suckle their children for long periods. The number of those brought up by hand is comparatively small, and some of them are fed on the popular farinaceous foods with a very small proportion of milk.

JOHN MACKENZIE, L.R.C.P.,
Medical Officer of Health Kirkby-in-Ashfield.

I cannot accept all the tuberculosis found in children is dae to milk infection. The children of the poor are often breast-fed. The mothers believe that whilst they suckle their children they will not conceive again. The milk is kept in the homes of the poor under conditions that greatly encourage tuberculous infection, if it should be otherwise present in the house. Tuberculous meningitis I have often observed to be due to disease of the middle ear. The enlargement of cervical glands may be due to scarlet fever, diphtheria, and septic sore throat. Hence we must not rush to the conclusion that all large cervical glands are tuberculous.

THEODORE FISHER, M.D., M.R.C.P.,
Physician to Out-patients, Bristol Hospital for Sick Children.

I think Dr. Nathan Raw takes too extreme a view. I do not, of course, deny the possibility of primary abdominal infection, or that such infection is sometimes of bovine origin, but that infection through the respiratory tract is far in excess of that through the alimentary tract my own experience seems to leave no shadow of a doubt. Statistics may be quoted of the relative frequency of infection of the bronchial and mesenteric glands from Germany, France, and America, which present the matter in a different light from that given by Dr. Raw. In my experience the primary or only focus of infection is, in the great majority of instances, in the bronchial glands. Extension of infection from the mesenteric to the bronchial glands must be extremely rare. I can mention cases showing that tuberculous peritonitis and other forms of acute or subacute tuberculosis of abdominal organs may occur where the only caseous focus is in a single bronchial gland hidden within one lung.

W. LANGFORD SYMES, M.D.,
Physician, Orthopaedic Hospital of Ireland.

I wish to ask Dr. Raw what he actually means by tabes mesenterica. Dr. Raw quotes 273 cases of tabes. There are three forms of abdominal tuberculosis usually seen—namely: (1) Tuberculous peritonitis, of two or three kinds; (2) tuberculous ulceration of the bowels; (3) tabes mesenterica where the glands alone are affected. This latter is in reality the rarest of all kinds, and the use of this term frequently gives rise to misunderstanding.

EDMUND CAUTLEY, M.D., F.R.C.P.,
Physician, Belgrave Hospital for Children.

In one poiut I agree with Dr. Nathan Raw, namely, that probably the bovine bacillus gives rise to a different form of tuberculosis to that produced by the human bacillus, and that children are subject to both kinds of infection. I differ from him in regarding infection by the bovine bacillus as of comparatively rare occurrence. It is with the greatest regret that I hear Dr. Raw perpetuating that unfortunate name, "tabes mesenterica." It has led to endless confusion, and, on the grounds of scientific precision, should be omitted from the nomenclature of the tuberculous affections. I am still more astonished to hear him quoting Sir Richard Thorne-Thorne's statistics of tabes mesenterica in support of his views. Time after time it has been pointed out that these statistic are absolutely valueless. They were taken from the Registrar-General's reports, and it is well known that in those reports all cases certified as deaths from "consumptive bowels" are included under the heading of tabes mesenterica. This is absolutely misleading, for almost all cases so certified are nothing more or less than cases of marasmus due to diarrhœa and vomiting, from unsuitable feeding, and ending in death. I am not inclined to accept the statements of veterinary surgeons that about 30 per cent. of English cows are tuberculous. Such a statement may be true of highly-bred pedigree stock and of old milch cows kept under unsuitable conditions, and yet be absolutely inaccurate of younger cows kept in healthy country surroundings. Even accepting it as true the result is probably based on the reaction to tuberculin, and does not indicate that the milk is likely to be infective. The fact that many children get a mild infection and reeover is to my mind an argument of no value in favour of the views of Dr. Raw. The liability to infection by the human bacillus is enormous in the conditions under which the very poor live, and the milk may be infected by the human as readily as by the bovine bacillus. From the experience of a large hospital practice for many years I derived the impression that tuberculous meningitis diminishes in frequency in proportion to the increased use of cow's milk in infant feeding. Certainly the proportion of such cases has very much decreased in my experience under such conditions. I regard condensed milk as a potent factor in the etiology of tuberculous affections, by lowering the vitality of the child, and rendering it more susceptible to infection by the human bacillus. As to infection *via* the alimentary tract in opposition to infection through the pulmonary system, I should like to quote the result of 27 necropsies on cases of tuberculous meningitis.* In 25 instances the state of the mediastinal and mesenteric glands was noted, and in no less than 23 were one or more of the mediastinal glands caseous. In 4 out of these 23 the mesenteric glands were also caseous, but in none were they the only ones involved. On the whole, it seems to me that up to the present we have no justifiable grounds for concluding that tuberculous milk is a serious source of infection.

* *Reports of the Society for the Study of Diseases in Children*, vol. ii, p. 53, 1902.

GEORGE CARPENTER, M.D. Lond.,
Assistant Physician, North-Eastern Hospital for Children
Late Physician, Evelina Hospital for Children.

Certain cases of tuberculosis are, in my opinion, primarily abdominal. If infection of the lungs takes

place in these cases, it is probably secondary, and by way of the thoracic duct. Other channels of ingress are, however, much more usual avenues of infection. In a case of enteric fever with an intestinal ulcer and enlarged mesenteric glands, I found both tubercle and typhoid bacilli in the glands. This proves conclusively that primary infection of the glands can occur. Dr. Raw has not called attention to a well-known occurrence in these cases of a sound mucous membrane with advanced caseous disease of the mesenteric glands. I object to the loose term tabes mesenterica, a nomenclature which should be abandoned. I have in a large experience only seen two cases of glandular disease which could be fairly called tabes mesenterica. The common clinical state is a mixed condition of tuberculous peritonitis, tuberculous ulcers, and caseous mesenteric glands, which can be detected as fixed abdominal lumps. I should like Dr. Raw to say what he really means to convey by the term tabes mesenterica. I think that many cases of dyspepsia in infants and young children are unwarrantably described as cases of tabes mesenterica. Are Dr. Raw's experiences clinical or pathological? I call attention to the importance of making a combined rectal and abdominal examination in doubtful cases. It is possible in this way to determine the presence of tuberculous peritonitis. Dr. Raw has spoken of abdominal section in these cases. I consider abdominal section unjustifiable, and all that is necessary in some cases of ascites, when there is considerable distension by fluid, is the simple operation of paracentesis abdominis, preferably by Southey's trocar and canula. Abdominal section should only be undertaken when there is pus in the abdomen or for the relief of intestinal obstruction. Dr. Raw has stated that he has never seen a case of abdominal tuberculosis which has not been fed on cow's milk. My experience is somewhat different, as I have met with two primary cases in breast-fed infants. In one of them the appearance was that of simple chronic peritonitis. The false membrane could be stripped off the intestines, leaving a polished surface, and it was not until a microscopical examination was made of this membrane that its tuberculous nature was recognised—it was crowded with tubercle bacilli.

W. McAdam Eccles, F.R.C.S.,

Assistant Surgeon, St. Bartholomew's Hospital.

I wish to emphasise the remark which fell from the President that, from a surgical point of view, there seems to be much evidence that there is a lesion prior to the infection by the tubercle bacillus. I think that there might be direct infection through the blood stream, without involvement of the cervical glands, of both meninges and of joints. So many children suffer from lesions of the tonsils and naso-pharynx that it would seem possible, even probable, that bacilli in milk may be arrested and imprisoned here, and become directly absorbed. In tuberculous peritonitis, if there is no secondary infection, recovery would seem to be the rule, and therefore the question of a primary tuberculosis of the abdomen is important from a point of view of prognosis.

Reply.

Dr. Nathan Raw thanked the members of the Section for their criticism of the points raised in the paper, and read a letter from Prof. Madden (Cairo) supporting his view that children in Egypt were not often attacked with tuberculous glands or abdominal tubercle owing to the general custom in Egypt of suckling the children up to the age of 2 years. He was strongly of opinion that tubercle spread from the abdomen to the lungs in children a great deal more frequently than *vice versa*. He concluded by affirming the view that human and bovine tuberculosis were different species of tuberculosis, and that the child was more susceptible to bovine than human infection, and that the general mode of infection was by the ingestion of tuberculous cow's milk.—*British Medical Journal.*

THE SURGEON OF THE HORSE.

By H. F. Prevost Battersby.

Amesbury, Thursday, Sept. 4.

In the preceding article the term veterinary was used apparently as applying to the Remount Department.

No irony was intended, nor was it meant to fix on the department any intimate knowledge of the horse. The remount simply blocked the way to the veterinary department, and had first to be dealt with. In South Africa one was mainly occupied in repairing, or rather in failing to repair, the deficiencies of the other.

The remount accumulated a vast variety of useless beasts in the country, the veterinary contemplated them with a humorous and despairing interest.

The incompetence of the one was about equally matched by the incompleteness of the other, and the combination of the two contributed the largest share to the futility of the Cavalry in the first year of the campaign.

The collection of ailing horses on a large scale would be of small assistance to the prosecution of a campaign even when facilities exist to treat them. In South Africa such facilities were not only absent, but could not adequately be contrived. Sick lines, sick camps, sick farms there were, but the proportion of recuperated horses which they produced bore a ludicrous relation to the labour, the food, and the time expended.

Even on the march the veterinary skill available, largely reinforced as it was by civil assistance, was absurdly insufficient.

With the supervision which should have been possible, and the administration of horseflesh in the right hands, many a failure might have been retrieved, and many a delay avoided.

Constitution.

The Army Veterinary Department is the unorganised accessory that the Medical Department was in more evil days. It has been denied autonomy, and has in consequence remained ineffective. The decentralising principle, which in military matters has had so many advocates, has stopped short at the department which needed it the most. At present the Army Veterinary Department has no organic vitality, no internal structure, and consequently in time of emergency no capacity for expansion. In the very department where trained supervision is most needed its existence is forbidden.

What would be thought of hospital arrangements which put the carrying out of the physician's orders in the hands of untrained assistants? Yet this is the system under which the Army's sick horses are expected to thrive.

As Things Are.

Instead of a skilled staff of farriers, shoeing smiths, and so forth, whose service would be entirely devoted to the ailments of horses, in whose hands the sick beasts would be always treated with expert knowledge, who would be fitted by experience to supplement surgical directions, and who would have a direct interest in returning speedily to duty the cattle in their charge, the department has to rely on the offices of trooper and bombardier, as may be, sent with the horses to the sick lines, men representing, as a rule, the easiest spared from squadron or battery, and consequently the worst

fitted for any task which demands, above all things, the diligent and conscientious carrying out of orders.

And not only is this improvised and always changing staff unsuited to supplying proper medical treatment, it is often insufficient even for the duties of grooming and common cleanliness. The veterinary officer is, as a rule, aware of this unsatisfactory condition of the horses in his charge, but he is quite powerless to improve it.

He has many other duties beyond the sick lines, and cannot spend time, of which he has all too little, seeing that his orders are carried out. Over the men under his command he has no disciplinary control, and if they prove insubordinate he has to bring each before his particular commanding officer—often in camp a question of miles apart—and so waste still more of his crowded hours.

He naturally prefers to make shift without such desperate remedies, and the men, recognising the horns of his dilemma make the most of the space between them.

Responsibility.

When met by complaints from commanding officers on the condition of things under his delusive control many a veterinary officer has tried to force an adverse report, anxious to have publicity directed to the hopeless obligations under which he works.

For these there is but one remedy—a sufficient and competent staff and complete administrative control within the unit. The department must be furnished with the assistance it requires, such assistance must be always under its direct command, and for the efficiency of that assistance it wholly must be held responsible. That is the only path to progress in the Army—responsibility, and something to be responsible for. At present the veterinary department has nothing but a case of medicine and its own soul. The care and cure of horses, the one function for which it presumably exists, is hedged about by restrictions which make success impossible.

And from such reorganisation many things would accrue besides economy in treating the sick.

The department would be able to furnish in every station a school of instruction in which the trooper or bombardier of promise might be taught much that would make him of real utility in time of war. The whole art of shoeing, at present so perfunctorily acquired, would of itself pay even in peace the cost of its tuition.

Regiments and batteries would be mulcted to a very slight extent to provide attendants for sick horses, and those so employed would have a chance of obtaining useful learning, instead of making the sick lines an opportunity for "slacking it."

On the question of economy it is hardly necessary to say a word. There is nothing so costly as inefficiency.

The Test of War.

We have spoken only from the peace point of view. It is war that pierces to the marrow of incapacity.

Being not a corporate body but merely an integument, the veterinary department was unable to provide from within any of those multifarious developments which a campaign prescribes.

It had nothing of its own to use as centres of expansion. Instead of skilled farriers and smiths, men with horse knowledge and a record for trustworthiness, it had to pick up any waifs and strays, unwanted elsewhere, to perform duties on which, as events proved, the progress of the campaign depended. Veterinary officers had no control of the supply of remounts, no voice in their apportionment, or such a voice as anyone who happened to find it convenient could ignore. They saw horses shot before their eyes which needed but a few days rest and treatment, they watched horses worked to uselessness which the commonest prudence would have cured. They were powerless to do aught but "recommend." They were powerless, even had more been granted them, to create at that eleventh hour effective horse hospitals from a case of medicines and a few wastrel troopers.

So the millions went; so the millions will go again if things remain as they are.

Nothing can be accomplished in any department without complete internal organisation and disciplinary control.

A Dwindling Department.

But there is a further reason why something must be done and done immediately. Under its present conditions the veterinary department as a military unit will presently cease to exist.

In South Africa its shorthandedness was made wickedly apparent. Every brigade should have had its veterinary officer, with a subsrdinate attached to each battery and regiment. To these latter should have been entrusted the rounding up of horses on the march with the aid of native scouts, as was occasionally most successfully done, thus forming a provisional depot from which horses could be drafted temporarily to relieve the sick or to fill gaps in the ranks till a fresh supply of the emaciated remount was forthcoming.

The regimental and battery commanders could have indented on the veterinary officer with the brigade for the animals they required, who would have drawn the supply under their supervision from his subordinate's reserve.

A Climax.

With the shortage of officers which existed, however, no system was possible. There was occasionally but a single veterinary surgeon to two thousand animals, a proportion which made him, for any purposes of increased efficiency, practically useless. To supplement the shortage civil veterinary surgeons were hurriedly obtained, but these even when satisfactory, were without military discipline, and had small experience of the ills peculiarly incidental to active service, or of the means of treating these with an extremely restricted choice of remedies.

But the deficiency of officers was not occasioned only by the increased demands of active service, but by what we have called the moribund condition of the department.

At the last examination of candidates four presented themselves to compete for something over thirty vacancies.

Of these two were declared physically and two mentally unfit.

Expensive Makeshifts.

Some remedy for this discouraging climax must be found if the veterinary surgeon is to continue in a military sense.

The civil assistance procured during the war has had to be continued, and the very unsatisfactory spectacle may be seen of the military and civil servant working side by side at the same duties, the civil one with no record of service behind him, possibly less competent than his comrade and occasionally running a business of his own as well, drawing a very considerable advantage in the way of pay.

This is a form of economy which the most accommodating taxpayer may well resent.

One cannot expect every reform at once, but there was an army veterinary question before the war, shelved for future reference like many another inconvenient subject, and with the fresh evidence acquired one has some right to look for a settlement, though Mr. Brodrick's pronouncement on the subject shows a complete misapprehension which does not tend to raise one's hopes.

Remedies.

The cost of a veterinary education is considerable, far

greater than that demanded of other candidates for a commission. In place of, as heretofore, some ten months at Sandhurst, four years have to be spent at a veterinary college before a candidate can present himself for examination, which it is quite possible he may fail to pass.

The authorities have shown an appreciation of that oulay by offering a high rate of pay at the start to attract men who have exhausted their capital.

There, however, its encouragement ends. The improvement in income is slow and slight; no inducements are held out to real capacity; the position offered is not sufficient to attract the type of man to whom position is essential, the prospects do not compete satisfactorily with those of civil employment, and, more than all else, the work is made by its irresponsible and superficial character fundamentally uninteresting. No mere patching can produce a remedy. The remount and veterinary difficulty can only be met by merging the two into one department, to which shall be entrusted the provision and supervision of all horses in the Army.

This will give the competence which the one lacks and the dignity which the other desires, it will end the ruinous policy of dual control, it will bring increased freedom to the combatant branches, will ensure economy in the future to the man who pays, and will incidentally provide, in the event of future blundering, a neck for the halter.—*The Morning Post.*

THE RHODESIAN TICK FEVER IN THE TRANSVAAL.

By Dr. THEILER, Government Veterinary Bacteriologist.

The three Centres of Invasion.

The invasion of the Transvaal by this new scourge came, so to say, out of three original centres, namely, Delagoa Bay, Koomati Poort, and Nelspruit. Considering these centres to be thoroughly infected, it may be said that no cattle will escape the disease there. At these different places fresh cattle were repeatedly brought in, and they died invariably within three to four weeks after exposure.

The Disease not Contagious.

It was generally found that the disease was not a contagious one in the pure sense of the word. Animals exposed to infection usually began to sicken from the 17th, 18th, and 19th day upwards, and then died after they had left the infected area. They may have mixed all that time with healthy cattle, the very cattle remaining unaffected for the time being. It was now, however, observed that from two to several months later the disease began to make its appearance amongst the healthy cattle which had mingled with the infected herd, or which had been grazing over the same ground where he sick animals some month previously had been dying. As a striking example, I will give an experience which came under my direct notice. As already stated above, I examined some sick cattle on the 23rd and 24th of November last year at Derdepoort. At that time I prophesied to the farmer that the disease would reappear after a few months amongst the remainder of his cattle and whatever cattle he might bring on the farm, unless proper measures were taken, which I indicated. These were apparently not taken, and the result was that, about the 20th May, 1903, that is to say, about six months later, 12 oxen died of the same disease—oxen which had been staying on the farm for some time. I had the opportunity of examining blood microscopically of these sick cattle, and found the typical parasites. Similar observations were made elsewhere. From these investigations, we may conclude that wherever animals suffering from the new disease have been grazing such pasture is liable to become infected, and that such ground retains its infection for many months. It was possible to trace the disease in nearly all secondary outbreaks up to the present time back to sick animals, and it will be so whenever it makes its appearance in fresh non-infected districts. It has become well-nigh impossible in infected districts, and, I am sorry to state, to a certain extent also in Pretoria. I have examined blood from a cow which died near the racecourse; from an ox which died on the road to Derdepoort; and in both cases the typical parasites of the new disease were present. I saw in the *Volksstem* of the 2nd of June, 1903, a note that in the suburbs of Pretoria cattle were dying of an unknown disease, and I have no doubt that Rhodesian Tick Fever is to some extent responsible.

Nomenclature and Cause of the Disease.

The new disease was called in this country Rhodesian Redwater. The name Redwater may be wrong, and from a practical point of view it may be advisable to substitute another one. And we propose to call it "Rhodesian Tick Fever," or "Coast Tick Fever." There is no doubt the disease can be grouped with that group of diseases of which common South African Redwater is the principal one. Prof. Koch has, as quoted in Mr. Hutcheon's report, seen it in 1898, in German East Africa, and identified it with Texas Fever, alias our common South African Redwater. This, and the fact that a certain percentage of the affected animals show red urine, explains the first use of the very term "Redwater." This, however, is of slight importance, as long as it is clearly understood that Rhodesian Redwater is by no means identical with the common South African Redwater, familiar to every farmer and transport rider. At the beginning of the outbreak, however, the general opinion among the experts was that this Rhodesian Redwater might be a more virulent form of the ordinary Redwater. Dr. Hutcheon witnessed the first invasion of our ordinary Redwater in the Cape Colony, relates the history of that outbreak, and, indeed, the similarity of the evidence at that time with the present is striking. In addition to these former experiences, came Professor Koch's authority. He described the disease in the first instance as Texas Fever. The evidence accumulated, however, daily that the disease, although closely related to our common Redwater, was a new disease altogether. To clear this question up a series of experiments were undertaken, which removed the last doubt on the subject. Mr. A. C. MacDonald, Director of Stock, of the Repatriation Department, on behalf of his Department, interested himself in the matter, and so also did the Land Settlement Department; and, with the kind permission of Mr. F. B. Smith, Director of Agriculture, 28 head of cattle were exposed to natural infection in Nelspruit. The cattle belonged to different breeds, and were treated in different ways.

A New Disease—not Redwater.

Texas Cattle.—(a) No treatment had taken place. Nine animals were exposed, Nos. 135 to 144.

(b) Animal prior to exposure injected with blood of ordinary Redwater (10 c.c.) One animal exposed, No. 80.

(c). Animals prior to exposure injected with blood of Rhodesian Tick Fever (10 c.c.) Two animals exposed, Nos. 71 and 79.

(d). Animals prior to exposure injected with blood from an ox salted in Komati Poort on Rhodesian Tick Fever. Two animals exposed (10 c.c.), Nos. 72 and 74.

Cape Oxen.—(a) Animals injected with blood of ordinary Redwater prior to exposure. Three animals exposed, No. 85 (twice injected, 10 c.c. and 50 c.c.), No. 109 (5 c.c.), and No. 111 (5 c.c.)

(b). Animals injected both with ordinary Redwater blood and blood of Rhodesian Tick Fever. One animal exposed, No. 113 (5 c.c. ordinary Redwater and, later, 10 c.c. Rhodesian Tick Fever).

Madagascar Oxen.—(a). Animals injected with ordinary Redwater blood. One animal exposed, No. 86 (50 c.c.)

(b) Animals injected with blood from an ox immunised in Komati Poort with Rhodesian Tick Fever, and afterwards tested with blood of ordinary Redwater. One animal exposed, No. 91 (50 c.c. immune blood, 10 c.c. Redwater blood.)

(c) Animals injected with blood from an ox immunised in Komati Poort on Rhodesian Tick Fever, and afterwards tested with blood of Rhodesian Tick Fever. One animal exposed, No. 93 (50 c.c. immune blood, 10 c.c. Rhodesian Tick Fever blood).

(d). Animals injected with blood from an ox immunised in Komati Poort, One animal exposed, No. 94 (100 c.c.)

Africander Oxen.—Ox 115 was treated as follows prior to infection :—

27/8/02.—Injected 2,000 c.c. blood of ordinary Redwater.

8/10/02.—Injected 2,000 c.c. blood of ordinary Redwater.

14/10/02.—Injected 2,000 c.c. blood of ordinary Redwater.

14/11/02.—Injected 2,000 c.c. blood of ordinary Redwater.

27/11/02.—Injected with 10 c.c. Rhodesian Tick Fever blood.

Ox 145 injected 14/10/02 with 100 c.c. ordinary Redwater.

Ox 117, was hyper immunised against Rinderpest.

Oxen 119 and 128 were Controls. Recently imported Cape animals.

Immune Ox from Komati Poort, No. 87.

All these animals were exposed in Nelspruit on 15th January, 1903. By February 12th, 1903, all except ox 87, which is still alive, had died. With the exception of 128, 138, 140, 141, which showed exclusively large forms of Pirosoma bigeminum in the blood, the remainder had the typical parasites of Rhodesian Tick Fever. This experiment is interesting from several points of view, and we shall return to these in the course of this paper. What interests us most at the present time is the fact that no breed of animals either naturally immune against ordinary Redwater or Texas Fever resisted the infection! Nor did any of the animals which were tested by inoculation with either ordinary Redwater or Rhodesian Tick Fever! The case of ox 115, which was hyper-immunised to the extent of 3000 c.c. against ordinary Redwater is a striking illustration of the fact that the strongest immunity against our common Redwater gives no protection against the new Rhodesian Tick Fever. Hence we arrive at the definite conclusion, namely, that Rhodesian Tick Fever is an entirely new and distinct disease.

Cause of the Disease.

The red blood corpuscles of an animal suffering from the new disease contains to a very large extent typical parasites, which belong to the group Pyroplasma. They may easily be detected in preparations stained with Methylenblue (Kuhnes Methylenblne); but the best results are obtained by using the double stain now in vogue for the diagnosis of human malarial fever. (Laveran's Stain, Azur II., etc) The Pyroplasma shows then a distinct nucleus (Karyosoma), which takes a deep red colour and a slightly blueish-tinged protoplasma. We observe the following forms: (1) Elongated forms, bacillary shaped, straight or curved. Their length is about 1-5 M. to 3 M.; equal from $\frac{1}{4}$ to $\frac{1}{2}$ of the diameter of a red blood cell. They are very fine, and on one end inflated. This end contains the Karyosoma. Forms can also be observed which show both ends inflated. They have to be considered as parasites which undergo division. The curved elements take sometimes the form of a ring. (2) The coccus, or spherical forms. They differ in diameter, resembling very much a micrococcus, and may reach the size of about half the diameter of a Pyroplasma bigeminum. They are frequently found joined together. The double stain reveals also a chromatic body, which usually lies on the margin of the slightly bluish-tinged sphere. The very fine parasites seem only to consist of a chromatic grain. (3) The typical forms of Pyroplasma bigeminum. These are the parasites which are constantly found in our common South African Redwater. They are pear-shaped, spindle-shaped, or spherical. The first two forms vary in length from 2·5 M. to 3·5 M., the spherical ones have a shorter diameter (1·5 M. to 2 M.) They are found singular or joined in one red corpuscle. The double stain reveals the Karyosoma very clearly.

The three mentioned parasitical forms may exist in one and the same animal, and even in one and the same red corpuscle. The bacillary Pyroplasma is, according to our experience, the most commonly met with in the new disease; then the coccus form. The Pyroplasma bigeminum is only met with in the minority of cases, and then usually in few numbers.

One single corpuscle may contain up to half a dozen of the bacillary or coccus forms, very often both shapes are seen to infest a red corpuscle. They are but rarely met with outside the red blood cells.

As already mentioned, these animals were exposed at Nelspruit on 15th January, 1903, which day may count as first day of exposure. No. 138 and No. 141 died on 18th January, 1903, or three days after exposure, or at a time when the incubation period for the Rhodesian Tick Fever could not possibly have elapsed yet. They died of ordinary Redwater, accordingly, no bacillary or spherical (cocci) forms were found in the blood. Nos. 128 and 140 died on 24th January, 1903, or eight days after exposure; also after a time which is, as will be shown later, shorter than the shortest noticed incubation period. The bacillary forms of Rhodesian Redwater, could not then have appeared. It is, therefore, to be concluded that these four animals were infected with ordinary Redwater prior to their departure. Thus, out of the 23 cases which now come under consideration, 14 showed forms of Rhodesian Tick Fever, and nine were accompanied with the pyroplasma bigeminum of South African Redwater. The question arises now whether the typical pyroplasma bigeminum belongs also to the life cycle of the Rhodesian Tick Fever parasite, or whether it is a species, *sui generis*, and accompanies Rhodesian Tick Fever as a secondary infection. As already stated, Professor Koch, in his report, quoted by Dr. Hutcheon, thought at that time that the small organisms were really the first forms in the development of pyroplasma bigeminum. There exists three possibilities :—(1) The typical large parasite is the last stage in the development of the bacillary pyroplasma. In this case we would expect it under all circumstances in a sick animal, which, as shown above, is not the case. (2) In the case of animals salted against ordinary Redwater, under the influence of the new disease, the typical large parasite may reappear. We find a similar condition in Rinderpest. We have repeatedly oberved that an ox immune against ordinary Redwater which undergoes a severe form of Rinderpest shows at the post-mortem symptoms of Redwater, and the pyroplasma bigeminum is found in the blood. We know, also, that the blood of an ox which is immune against ordinary Redwater may produce the disease in not immune animals after injection. The pyroplasma bigeminum, although under ordinary circumstances rarely seen in the blood under the microscope, is there all the same, and, as in the case of Rinderpest, it sometimes makes its appearance when the system is run down by another

disease. (3) In the case of animals not salted against ordinary Redwater there would be a simultaneous infection of both ordinary Redwater and Rhodesian Tick Tick Fever. The country of the Transvaal which is most infected with Rhodesian Tick Fever is, at the same time, also a Redwater infected area. So any animal which is not immune is in danger of being infected by the two diseases at one and the same time. The post-mortem lesions are somewhat similar in both maladies, and thus do not indicate the presence or absence of one or the other disease.

The evidence, so far collected, points to the fact that the pyroplasma bigeminum has nothing to do with the pyroplasma of Rhodesian Tick Fever.

Frequency of the Pyroplasma in the Blood of Sick Animals.

When we examine smear preparations of blood taken from a sick animal just before death, we rarely fail to find 60 to 90 per cent. of all red corpuscles infected. A microscopic diagnosis is, therefore, almost infallible. At the beginning of the disease the parasites are, however, rare, but afterwards increase as the disease develops.

Incubation, Course, and Symptoms of the Disease.

When the cattle are exposed to this infection it can be noticed, some time after, that they begin to fall sick. This time varies, necessarily, for every exposed animal, as the chances are that all animals do not become simultaneously infected. The real incubation time can, therefore, only be ascertained by experiments. From our investigations at Nelspruit, we have ascertained the following facts:—

The shortest period of incubation was 10 days. This occurred in one animal only; in a second animal the period was 11 days; in 15 animals this period was 12 days. This lot sickened all on the same date. In the fourth case the same period was 13 days; in the fifth 14 days; in the sixth, 15 days; and in the seventh case it lasted 20 days. The 15 animals, which sickened on the same date, were probably simultaneously infected, and represent, accordingly, the usual incubation period of the disdase. The malady bagins with a rise of fever, the temperature jumping all of a sudden from normal to 105 or 107 in the evening, and keeps on oscillating for some days, sometimes below that initial temperature, but usually rising to higher degrees (106-107) a day or two before death. In exceptional cases the temperature does not rise suddenly, but increases gradually as the disease runs on, and finishes up with very high fever. This fever lasted, in our experiments, in the shortest case five days (the day of death is included); in a second case it lasted six days; in a third case (two animals) eight days; in a fourth case (two animals) nine days; in a fifth case 11 days; in the sixth case (four animals) 12 days; in the seventh case 13 days; in the eighth case (six animals) 14 days; in the ninth case 16 days; and in a tenth case 19 days; and in the eleventh observation it lasted 20 days. The average course of fever can thus be reckoned to last about 13 days. The disease will thus run from infection to death an average period of 25 days. The shortest period observed by us was 18 days (four animals); then we observed periods of 19 days (three animals); 20 days (two animals); 21 days in five animals; 24 days (seven animals); 25 days (five animals); 26 days (five animals); 28 days (one animal); 29 days (two animals); and 31 and 34 days. As already stated, the animals with the long periods may have become infected at a later date than those which died with the shorter or average period. Here, then, is an indication of the time required before a herd is wiped out.

(To be continued)

A SCHOOL OF VETERINARY TROPICAL MEDICINE.

The success which has attended the establishment of the Schools of Tropical Medicine in London and Liverpool, and the good work already accomplished by students who have been educated in them, have suggested an extension of the system in the direction of affording similar facilities for the study of the tropical diseases of animals—diseases which are often of extreme malignancy, and which are of even greater importance in countries largely dependent upon beasts of burden for the means of transport than they are elsewhere. The

DISEASES OF ANIMALS ACTS 1894 & 1896.

Summary of Returns, Week Ending September 5, 1903.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies.		Swine Fever.	
	Outbreaks	Animals Attacked.	Outbreaks.	Animals Attacked.	Outbreaks.	Animals Attacked.	Cases Confirmed. Dogs.	Cases Confirmed. Other Animals	Outbreaks.	Slaughtered as Diseased or Exposed to Infection
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended September 5, 1903 ..	9	17	..	..	29	59	..	..	15	34
Corresponding week in 1902 ..	9	10	..	..	34	57	..	..	19	96
Corresponding week in 1901 ..	12	12	..	..	24	46	..	..	46	246
Corresponding week in 1900 ..	9	27	..	..	27	32	..	..	19	176
Total for 36 weeks, 1903	559	855	..	..	1058	1728	..	..	1124	5,722
Corresponding period in 1902 ..	485	778	1	120	818	1452	12	11	1,234	5,596
Corresponding period in 1901 ..	446	630	12	669	954	1631	1	1	2,707	13,080
Corresponding period in 1900 ..	381	675	13	212	776	1300	1	..	1,518	14,875

Note.—The figures for the Current Year are approximate only.

Board of Agriculture, Sept. 8th, 1903.

idea appears to have been first suggested by the late Professor Nocard, of Paris, in an address which he delivered at Liverpool a few weeks before his death. After eulogizing the sagacity and public spirit of the founders and supporters of the School of Tropical Medicine, he directed attention to the lack of any means of instruction in the tropical diseases of animals as a defect in its work which might with great usefulness be remedied; and he mentioned as evidence of the necessity for such instruction that during the war in South Africa the inhabitants of the Mauritius, who were accustomed to obtain the cattle required for their farms from Madagascar, were unable to continue the practice on account of the rise in price occasioned by the demands of the British Government. In these circumstances some of them thought of obtaining cattle from India, where they were comparatively cheap; and a cargo was accordingly imported. Some of these cattle died on the voyage from an imperfectly understood cause, and many of the survivors were ill, but after a time apparently recovered, and were distributed over the island among various purchasers. The cattle already in the island speedily contracted disease from the newcomers, and perished in such numbers as seriously to prejudice the gathering in of the cane harvest and to threaten the agriculturists of the island with ruin. It was discovered too late that the disease was due to a parasite communicated to the animals by a fly after the same fashion as the trypanosoma is communicated by the tsetse; but there were no veterinary practitioners in the island who were able at first either to recognise the character of the disease or to show in what manner it might be controlled. The same history would manifestly be liable to repeat itself elsewhere, and Professor Nocard strongly urged that the existing tropical school of Liverpool should be made available for the instruction of veterinary surgeons.

A committee has been formed for the purpose of giving effect to this suggestion, and the veterinary branch is now open for the reception and instruction of students. It is under the direction of Professors Boyce and Sherrington, with adequate assistance, and a farm has been provided at Runcorn for its requirements. Full information with respect to it may be obtained from Dr. H. E. Annett, Johnston Laboratories, University of Liverpool.—*The Times.*

Personal.

On Tuesday afternoon, August 11th, a very pretty wedding took place at St. Paul's Church, Poona, the contracting parties being Mr. Digby Bolton, A.V.D., and Miss Gertrude Lloyd Price, the daughter of Surgeon-General Price, P.M.O., Bombay Command, and Mrs. Price.

There was a large gathering of the officials of the Bombay Presidency, both Civil and Military, to witness the marriage. The bride came down the aisle leaning on the arm of her father, who gave her away. The bridesmaid was Miss Gwladys Price, sister of the bride. The bridegroom was accompanied by his best man, Mr. Campbell, R.F.A. At the house of the bride's father a large company assembled. Colonel Saunders proposed the health of the bride and bridegroom. He said the present bride and bridegroom had only a short time to stay in India, as they were booked for Home before the end of the present year. They would soon have an opportunity of welcoming the couple back as the term of Home service was usually a short one; he hoped that he himself, and many then present, would be there to welcome them back once more to these shores. The wedding party were photographed, and later the bride and bridegroom left under a shower of confetti.—*Advocate of India.*

Bell.—On August 28th, at Heidelberg, Transvaal, the wife of Captain J. H. Bell, South African Constabulary, of a daughter.

CORRESPONDENCE.

THE A.V.D.

Sir,

Having so many friends in the A.V.D. with whom I am in constant communication I am for obvious reasons obliged to hide my identity, but all of them that I have had an opportunity of speaking to are agreed with your correspondent "Civilian" in *The Veterinary Record* of September 5th, that the only way by which their grievances will be rectified is as both you and "Civilian" advise "to keep on pegging away at the Secretary of State for War by getting questions put in the House" and "by harassing the Secretary of State for War when in his place in the House of Commons," in fact to follow the example of the medical profession.

As is well known, the hands of the Army Veterinary Surgeon are tied with red tape and military discipline and he has to trust to our leading men in civil life to advocate his cause. Having had some experience of officials and politicians and their ways, both in England and abroad, I quite agree with our military brethren as to the value to be placed on the promises and smooth sayings of an official. Such are his stock in trade, and the business of a private or under secretary is to be able to put off unpleasant visitors. His post depends on his success in this line of diplomacy. The universal opinion of the officers of the A.V.D. appears to be that in adopting the policy of "not worrying the authorities" instead of making a sturdy demand, those who have been in contact with them have succumbed to the voice of the charmer, or in other words that they have been hoodwinked by the astute politician.

Mr. Battersby's article in *The Morning Post* and Col. Duck's evidence before the Royal Commission on the war in South Africa, vol. I., pages 132 to 138, minutes of evidence lay bare the condition of the A.V.D. in 1899, before the war began, and its present state—which is infinitely worse, and Mr. McKillop's question in the House of Commons wrung an unwilling admission from the Secretary of State for War as to its truth.

It seems to be pretty well known in the A.V.D. that the Secretary of State for War proposed to fill up the vacancies in the A.V.D. with unqualified persons *not* members of the Royal College of Veterinary Surgeons, and that this would have been done had not high legal opinion been given that such persons would have been liable to prosecution under the Veterinary Surgeons Act of 1881. This scheme was in contemplation at the very moment that the Secretary of State for War and the officials were promising to consider the case and giving diplomatic answers to those who interviewed them.

These facts are not generally known to the public, but some of the members of the profession have a suspicion that something of the sort has been going on, and your correspondent "Civilian" may well ask if these are the type of persons to trust.

I must, in conclusion, add that all the military veterinary surgeons I have come in contact with acknowledge the debt of gratitude they owe to the civil members of the profession who have taken up their cause, but they regret that they have failed to understand the ways of the officials, and they are unanimously of opinion that the only way their grievances will be rectified or listened is that so ably advocated by you and your correspondent "Civilian."—Yours truly,

"Quasi Civilian."

Communications, Books and Papers received.—Messrs. H. J. Dawes, J. McKenny, P. J. Simpson. "Quasi Civilian." *American Veterinary Review*, *The Morning Post.*

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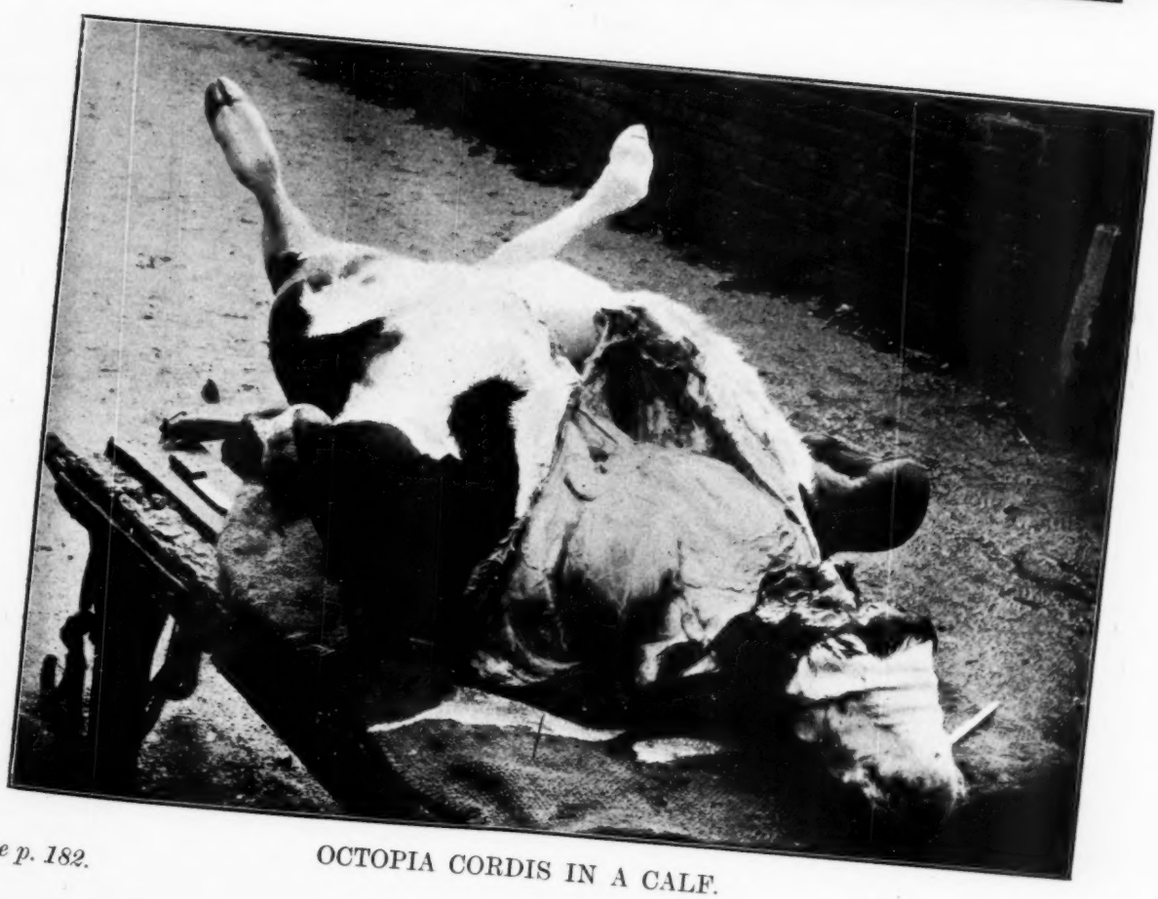

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OCTOPIA CORDIS IN A CALF.